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ASSESSING THE M-GOVERNMENT REQUIREMENTS IN INFORMATION STAGES

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Abstract

Recently mobile phone subscribers reach the peak of 6 million people, it means that more than the whole population of the world. So this is the first manmade technology that penetrated the globe, not only in a short period of time, but also a technology that can fulfill the digital gap in the poor societies as well. As a result there is a tremendous variety of business model to lunch different value added services base on mobile phones. One of these uses of mobile phones is m-government; the governmental services which offer to citizens through mobile phones. Also there is a growing trend for implementing m-government in the both developing and developed countries. In this paper by regarding the literature, we first categorize the requirement of m-government implementation and then we assess these requirements in the 4 information stages by a panel of experts. They believe that after the information stage the role of government are becoming more and more. And the proposed requirements are expected to be fully adopted as the level of stages goes to upper levels.

Key words: m-government, mobile phone, value added services, m-government stages, readiness assessment of m-government

Introduction

This is not more than 25 years after the first commercial and wide speared use of mobile phones. During these years there is a tremendous effort on not only the technology but also the use and the business models as well. The results of this effort is the penetration of mobile phone is more that the whole world population. The World Bank reports mobile communication has arguably had a bigger impact on humankind in a shorter period of time than any other invention in human history (Information and Communications for Development 2012:

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Maximizing Mobile, 2012). According to the ITU statistics 2011 while the penetration of mobile phone in the CIS countries is more than 145% this rate in the Africa is 53% and the whole world average is 85% (Mobile-cellular subscriptions per 100 inhabitants, 2011). While this gap is still huge, in comparison with the other technologies this is a global success. For example the penetration of internet in the Europe is more than 68% this rate in the Africa is 12% and the whole world average is 32% (Individuals using the Internet per 100 inhabitants, 2011). These numbers proof that the use of mobile phones are easier for common man in the globe than other ICT technologies. And according to different reports (Bhatnagar, 2009) in any field of public services which the target point is the bottom of the pyramid of any society, mobile phones are much better than any other tools.

Iran follows the global trend in mobile penetration as well. During the 12 years the subscriber of mobile phone became 50 times more (Mobile-cellular telephone subscriptions Mobile-cellular telephone subscriptions Mobile-cellular telephone subscriptions, 2011). And the rate of mobile penetration reaches to the 100% by the end of 2012 (Iran telecommunications Report, 2012). Despite different effort on lunching e-government project in Iran, still the ranking of e-government is not appropriate, so m-government project can be a very good chance to facilitate the governmental services.

The penetration is not just the only factor that influence the use of mobile phones, the more important factor is the formation of mobile value added services (MVAS) which is any kind of services that can be delivered to customers by mobile phones. Generally a value-added service (VAS) is popular as a telecommunications industry term for non-core services, or in short, all services beyond standard voice calls and fax transmissions. However, it can be used in any service industry, for services available at little or no cost, to promote their primary business. In the telecommunication industry, on a conceptual level, value-added services add value to the standard service offering, spurring the subscriber to use their phone more and allowing the operator to drive up their ARPU. For mobile phones, while technologies like SMS, MMS and data access were historically usually considered value-added services, but in recent years SMS, MMS and data access have more and more become core services, and VAS therefore has beginning to exclude those services (http://en.wikipedia.org/wiki/Value-added_service, 2010).

These value added services glorify during the recent 10 years and reshape from a fantasy service to the core and fundamental services. The categories of these services according to the report of PWC in India

are communication, entertainment, information, and m-commerce. The communication services include SMS, checking mails on gmail or always on push mail interface, accessing mobile search engines, instant messaging on blackberry, video calling, and facebook. The entertainment services include CRBT, Wallpapers, downloading or playing online games, video streaming, conferencing, mobile TV. Information services include Getting weather forecast, news websites, information related to location, info updates on profession, online maps and finally m-commerce services include mobile banking, hotel bookings, mobile tickets, stock trading etc (Connect with Consumers Value Added Services: The Next Wave, 2010).

Governments react on this demand by offering services through additional mobile communication channels. Such activities have become commonly known under the term mobile government (m-Government) and are usually regarded as a subset of e-government (Zefferer, 2011). M-government use all different variety of mobile value added services in different stages of implementation for different value transferring to citizens. There is a trend in implementing m-government projects in the global (Hany Abdelghaffar, Yousra Magdy, 2012).

M-government

The definition of m-governance is a strategy and its implementation to leverage available wireless and new media technology platforms, mobile phone devices and applications for delivery of public information and services to citizens and businesses (Framework for Mobile Governance, 2012), which emphasis on the strategy and the implementation of this strategy is m-government. The appearance of m-government term is such a young term and not more than 10 years and is still in infancy and early stages of development (Mansoor Alrazooqi, Rohan De Silva, 2010).

The m-government term hence appears as a powerful e-government component to facilitate the delivery of more and better services for citizens, in a customized manner and by means of various devices (Abraham Sotelo Nava, Irak Lopez Davila, 2005). It aims to leverage one of the most used communication medium, mobile phones, in improving Governments fundamental functions (Nitin Nagpal, Saurabh Agarwal, 2009). The use of mobile technology in government sector not only provides an alternative channel of communication and public service delivery, but more importantly, it can address the mobility of government itself and in this way transcend the traditional e-government service delivery model by bring personalized, localized and context aware services close to its mobile citizens (Song, 2005).

M-government is a combination of the two concepts e-Government and mobility that have been described and defined in the previous sections. The general idea of m-Government is to make use of mobile technologies in order to enhance existing e-Government procedures and services and to develop new mobile approaches in this field of application (Zefferer, 2011). M-government is not meant to be a replacement for e-government but a complement to e-government (A. Farshid Ghyasi, Ibrahim Kushchu, 2004).

Despite e-government which according to the OECD, is the use of ITCs, particularly Internet, as tools for better Governance (Abraham Sotelo Nava, Irak Lopez Davila, 2005); m-government is not limited to the accessibility of internet. According to the report of ITU the core indicators on access to, and use of, ICT by households and individuals are radio, TV, fixed line telephone, mobile-cellular telephone, computer, internet access at home (Core indicators on access to, and use of, ICT by households and individuals, 2010). This report which is based on the data from 227 countries shows that there is a gap between internet access and mobile phone in almost all countries. This issue enhances the capacity of this technology for using the facilities and more importantly innovation and the arrival of the mobile technology has created new opportunities for citizen participation and engagement through its vast reach (Nitin Nagpal, Saurabh Agarwal, 2009). This is a global truth that the penetration of internet in still not appropriate, specially in the poor and rural areas it means that for accessing the e-government services there is a gap not only in the developing and developed countries but also in the countries between rural and urban areas as well (Nitin Nagpal, Saurabh Agarwal, 2009).

For example in Iran while the mobile phone penetration is more than 100% the computer penetration is 33.7% and the internet access is just 20.8%. This trend is followed in countries such as India, Colombia, El Salvador, Mexico, Morocco and etc (Core indicators on access to, and use of, ICT by households and individuals, 2010).

In the context of delivery of Government services, mobile phones and accessories may be used in the following ways: of substitutes a fixed line phone as an access point for users to make calls to a call center run by the government to provide information and services like filing complaints, Push down message from a central server to reach users who seek specific alerts/information, Two‐way interaction using an SMS service to enquire and receive responses from a Government agency, A mobile phone and related accessories replace the Internet access point for delivering services in an assisted mode to clients,

Mobile phones given to functionaries who need to communicate with their supervisors or other functionaries to seek expert advice or pass instructions, Mobile phones are used as a data‐capturing device by field staff for collection of health statistics, reporting activity levels by field workers as a part of daily MIS, and conducting surveys (Bhatnagar, 2009).

M-Government can be applied to four main purposes in the public sector: m-communication, m-services, m-democracy, m-voting and m-administration (13). And also some other researchers mention other facets of m-government such as m-service, m-participation, m-voting and m-information. For facilitating different aspect of m-government there are some of the tools of mobile technology for providing information and soliciting input from citizens at their convenience such as Short Message Service (SMS), Multimedia Messaging Service (MMS), Interactive Voice Response System (IVRS), General Packet Radio Services (GPRS) and Video Calls (Nitin Nagpal, Saurabh Agarwal, 2009).

To be able to use these tools, there are some requirements and also different steps of maturity models. For extracting the requirements I use the maturity model which validated and localized in Iran (Fatemeh Saghafi, Fatemeh Nassereslammi, Masoumeh Alijerban, 2010). As general there are five basic classes of information modes Information, Communication, Transaction, Coordination and Collaboration. M-government aims at building these four information modes between government and citizen (Nitin Nagpal, Saurabh Agarwal, 2009). In this paper by regarding the literature we combine the information stages and m-government requirements, as a main framework.

Method and results

For finding the requirements of m-government we use the maturity model which proposed and localized in Iran and validity of this model is confirmed by a questionnaire and survey analysis with experts' opinions and using appropriate statistical tests (Fatemeh Saghafi, Fatemeh Nassereslammi, Masoumeh Alijerban, 2010). The requirements are: cultural Excellency, abilities and maturities of private sector, the effectiveness of governance, the executive forces, organizational, economic, political and strategic, legal, cultural and social, security, and finally technological issues.

Then we assess these requirements in 4 information stages as explained previously, by panel of experts of mobile technology field. The

results show none of these requirements ignored and all of them accepted by experts. The results are shown in the table below.

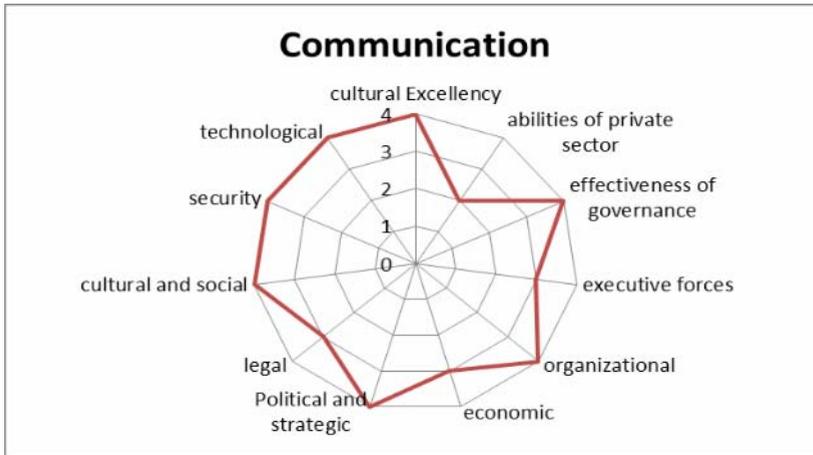**Table 5: The results of expert's opinion**
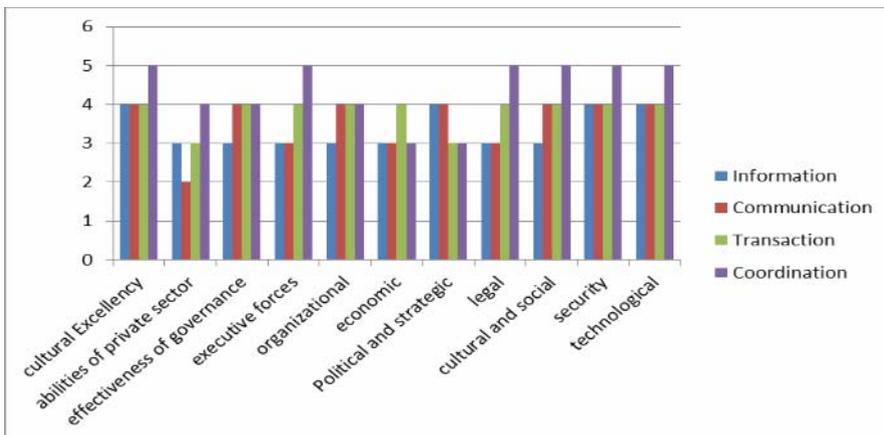
As its shown in table below at the information stage the experts believes that the cultural excellency, technological, security and political and strategic issues are more important that others, while other requirements are all more than average importance.

Table 6: information stage
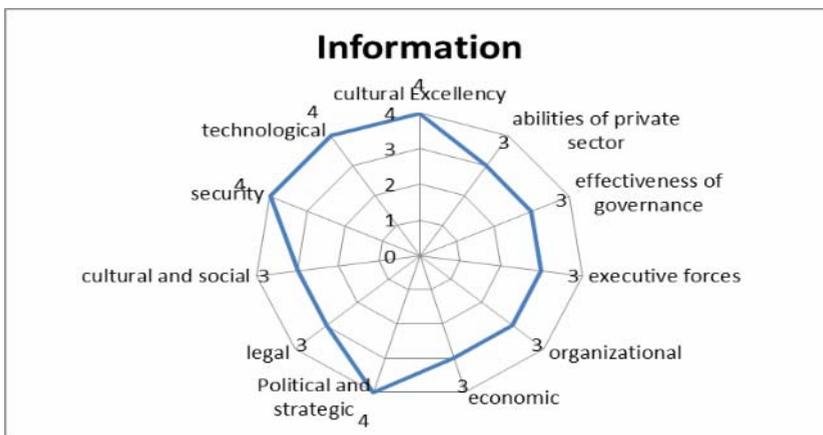
As its shown in table below at the communication stage the experts believes that the cultural excellency, technological, security, cultural and social, effectiveness of governance, organizational and political and strategic issues are more important that others, while other requirements except abilities of private sectors, are all more than average importance.

Table 7: communication stage

Communication

As it is shown in table below at the transaction stage the experts believes that all requirements except abilities of private sectors and political and strategic issues are so important.

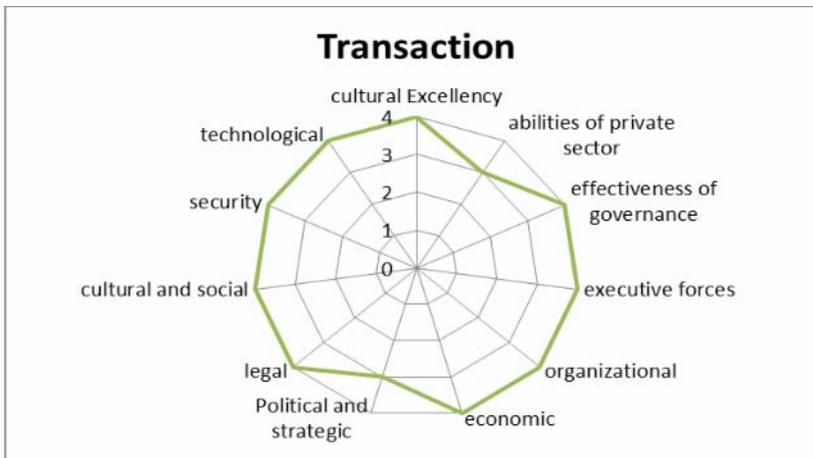**Table 8: transaction stage**

Transaction

As its shown in table below at the communication stage the experts believes that the cultural excellency, technological, security, cultural and social, effectiveness of governance, executive forces, and legal issues are more important that others, while other requirements except economic and economic issues are all more than average importance.

Table 9: coordination stage

As conclusion the proposed requirements are all accepted by experts. They believe that political and strategic issues are more important in the information stage than other stages. They believe that after the information stage the role of government are becoming more and more. And the proposed requirements are expected to be fully adopted by the level of stages.

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